

**ABSTRACT**

To perform a transmission diversity control in a best state by monitoring a transmission line state of an up-link and a transmission line state of a down-link. A base station, which  
5 controls a transmission state of a base station having not less than two transmission antennas by a transmission state control command transmitted from a mobile station via the up-link, includes: a receiving portion which receives a signal of the up-link; an up-link transmission line state estimation portion  
10 which estimates a transmission line state of the up-link with the transmission antenna of the mobile station from the above described received signal; a down-link transmission line state estimation portion which estimates a transmission line state of the down-link from the received signal; a transmission state  
15 control portion which controls the transmission state of the base station from the transmission state control command taken from the above described receiving portion, the transmission line state of the up-link, the estimated down-link transmission line state; and a transmission portion which performs  
20 transmission processing instructed from the transmission state control portion.